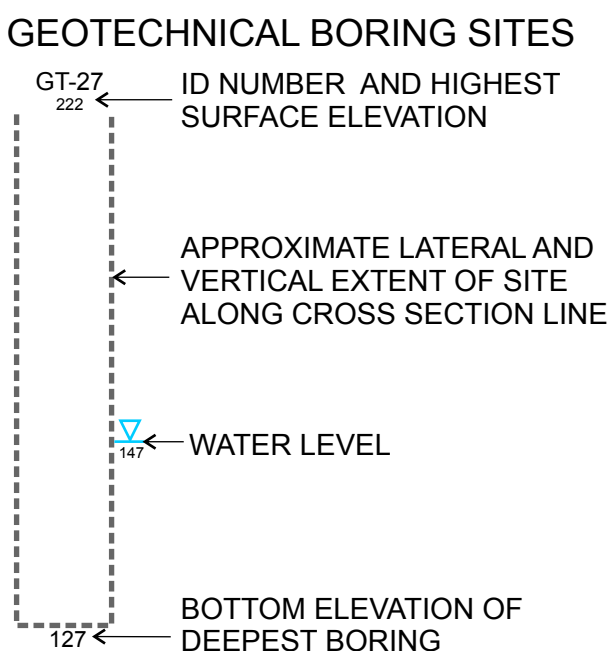
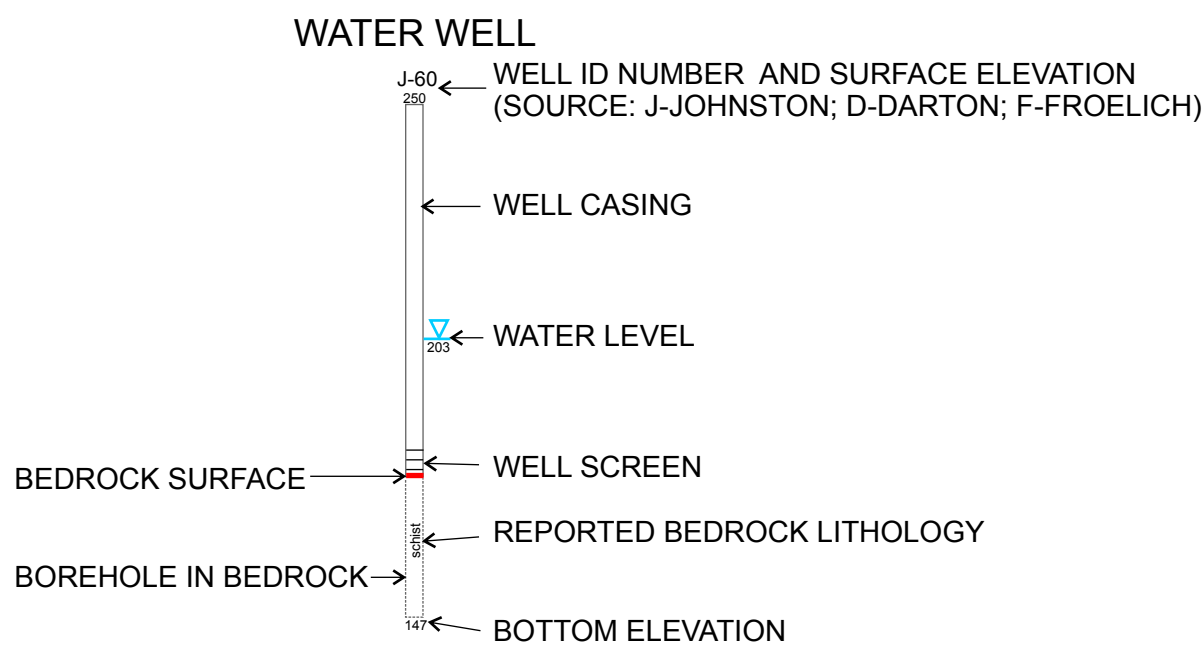
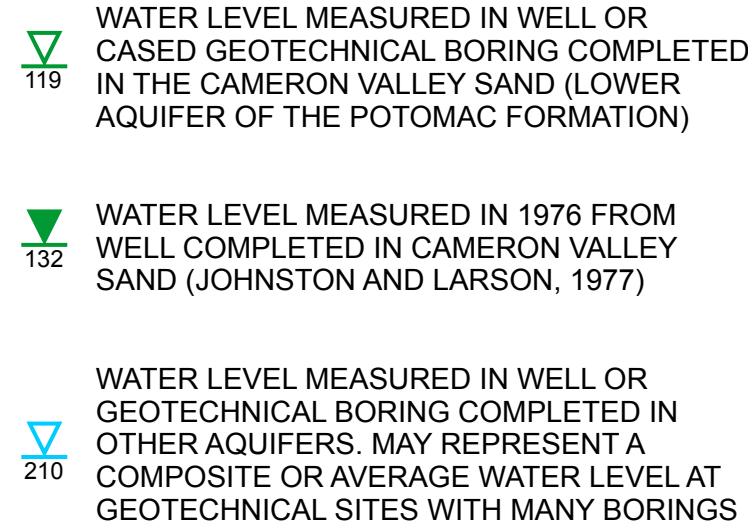


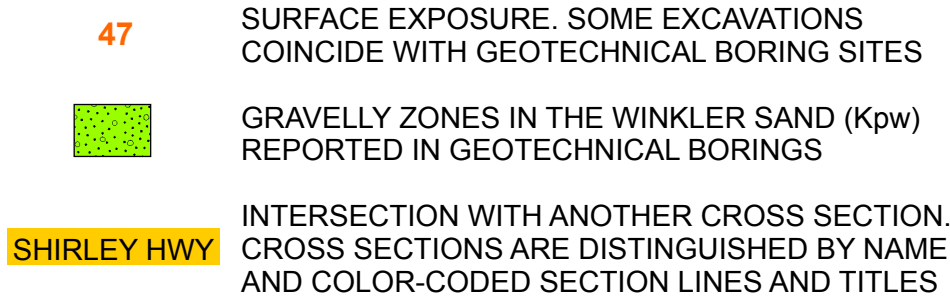
EXPLANATION OF CROSS SECTION SYMBOLS:



WATER LEVELS REPORTED IN WELLS AND GEOTECHNICAL BORINGS



OTHER SYMBOLS



GEOLOGIC CROSS SECTION 2N– SEMINARY ROAD

Cross section 2N begins just east of Baileys Crossroads and follows Seminary Road across the high terraces in the western part of the City, before gradually descending in somewhat step-wise fashion across the eroded remnants of several lower terraces to its terminus at the mouth of Timber Run. The section crosses the Dowden and Seminary terraces at their widest points in the City, giving rise to extensive upland “gravel plains” that bear the hallmarks of alluvial bottomlands, yet stand some 250 feet above modern river level. The perspective of the section also highlights the stratigraphy of the Potomac Formation as it explodes in thickness from a feather edge just west of the section to some 300 or more feet at the eastern edge of the Episcopal Seminary. Geotechnical boring sites, historical water wells, and other sites of cultural, historical, and environmental interest are indicated by labels and symbols along the cross section. The specific location of the cross section is indicated on Plate 1 by a sky blue section line.

Like the other cross sections, this section will be most informative when it is used together with the geologic maps, particularly Plate 5, to illustrate the third dimension of the map units and show their relations to landforms and water resources. Contacts between map units are approximately located and, in the Potomac Formation, may be gradational or transitional. The abundance of control points (surface exposures, wells, geotechnical sites) along the cross section provides a general indication of the reliability of contact locations. Map units are depicted using the same colors, patterns, and labels as on Plate 5, and the explanation of map units on Plate 5 serves as the legend. The section also depicts some bedrock units and gravelly zones in the Winkler sand that are present only in the subsurface and thus do not appear on Plate 5.

The dominant physiographic features are the extensive, plain-like upland surfaces of the Dowden and Seminary terraces. In this cross section, these terraces are little dissected by erosion and, in a few relatively undisturbed landscapes like parts of the Episcopal Seminary, preserve widespread silt caps that were probably deposited in major backswamps or as extensive blankets of windblown silt in large Tertiary river valleys. Both terraces exhibit strong weathering profiles that extend to tens of feet below the modern land surface. The intensity of weathering is so great that some pebbles composed of normally resistant, quartzose lithologies crumble when handled. Such intense weathering results in a near-complete loss of bases and other soluble constituents over time. While the original composition of the terraces is not precisely known, it seems virtually certain that they have lost a significant percentage (25% or more?) of their original chemical components via weathering, resulting in a substantial

reduction in volume. This further implies that deflation of their surfaces via compaction as these chemical constituents were removed has been a major process in their geomorphic history.

This cross section also illustrates one of the main lines of evidence for the Fort Williams fault, namely the offset of the Seminary terrace, which can be documented in scattered outcrops and geotechnical borings that show the base of the terrace to be as much as 30 feet lower on the east side of the fault. A similar relationship can be inferred for the Chinquapin Village terrace where it is cut by the fault in the vicinity of Forest Park and Chinquapin Hollow (see Plate 2M: King Street). Other lines of evidence for the fault include strong, homoclinal deformation of sand beds in the Potomac Formation at Fort Williams Park, and apparent offset of the base of the Arell clay by at least 25 feet where the fault crosses the Duke Street corridor.